Regn. No. 195 of 1928

C. 224

G-16
1927

SURVEY REPORT
OF
THE KARACHI HARBOUR
JANUARY-JUNE 1927.

Kohinoor Printing Works, Bunder Road, Karachi.

15246

G16
1940
15246

1927
G
No. 16

G-16.

SURVEY REPORT

OF

THE KARACHI HARBOUR

JANUARY-JUNE 1927.

2

KARACHI PORT TRUST.

REPORT

ON THE

State of the Karachi Harbour as shown by the 64th Annual Survey taken from January to June 1927.

:o:

1. The Entrance Channel has this year been maintained to the minimum depth of 28 feet (i. e. a foot more than last year) with a width of 800 feet from Green Light No. 2 increasing to 1,700 feet at Red Light No. 1.

The Lower Harbour Main Channel has been maintained to the minimum depth of 27 feet throughout with an average width of 600 feet from Berth No 1 to Green Light No. 3 and 800 feet from Green Light No. 3 to Green Light No. 2.

The Upper Harbour Main Channel has been maintained to a minimum depth of 27 feet (the required depth) with the exception of three small patches of 26 feet off Berths 12, 13 and 14. The least width of Channel is 650 feet from Berth No. 1 to Berth No. 16. Beyond Berth No. 16, the 27 feet Channel is reduced in width to about 300 feet, the remaining portion of the 650 feet width having a depth of 22 feet. From Berth No. 17 across to West Wharf Berth No. 1, the Channel varies in depth from 25 feet to 28 feet.

2. The Bucket Dredger "William Price" and the Hopper Dredger "Edward Jackson" have worked from July 1926 to June 1927, the Suction Dredger "Graham Lynn" worked for nine months during the year and the Side Ladder Dredger "Dubba" worked for two weeks only in July 1926, when she capsized.

The Suction Plant "Saras" has also been engaged in unloading barges of dredgings during the whole year, i. e. from July 1926 to June 1927, thus permitting the Bucket Dredgers to continue work during the S. W. Monsoon when in previous years all dredging had to stop.

3. The Bucket Dredger "William Price" has worked principally in the Upper Harbour Main Channel removing patches and maintaining the Channel to the required depth, i. e. 27 feet. She worked opposite West Wharf Berth No. 1 for one month and on a patch at Bulk Oil Pier for one week.

The Dredger "Edward Jackson" has worked in the Upper Harbour Main Channel and Napier Mole Boat Wharf for maintenance, and opposite West Wharf Berth No. 1 for deepening the Channel ; she also worked for two months at the Entrance Channel and for three months in the Lower Harbour Main Channel for maintaining the sanctioned depths.

The Suction Dredger "Graham Lynn" worked for about one month at West Wharf Berth No. 18 and for about six months on widening the Main Channel Upper Harbour and reclamation for the West Wharf. During February and March, before being laid up, she was employed, as a temporary expedient, in dredging along the face of Berths Nos. 17 to 2, in place of Side Ladder Dredger "Dubba", in order to maintain the standard depths of the Berths.

The Side Ladder Dredger "Dubba" worked along Napier Mole Boat Wharf in July 1926 when she capsized. The vessel was raised but was condemned and has done no further work during the year.

4. The Channel was not disturbed by any extraordinary seas or high tides during the South-West Monsoon of 1926.

5. The rainfall from July 1926 to June 1927 was 20.84 inches as registered at the Tidal Observatory at Manora, of which 14.15 inches fell on 5th and 6th September 1926 and the maximum and minimum thermometer readings were 106.8 and 48.0 respectively.

6. The following table shows the dredging operations for the year under report :—

Divisions.	Locality.	Quantity dredged in tons.	Remarks.
I	Harbour Entrance Section 34 to 25 ...	1,69,150	
II	Lower Harbour Section 25 to 3 ...	2,95,600	
III	Upper Harbour Section 3 to 48	19,61,102	
IV	Napier Mole Boat Wharf and Native Jetty Section 48 to 25	63,625	
	Total tons for 1927 ...	2,489,477	
	" " " 1926 ...	2,577,872	
	Decrease over last year ...	88,395	or 3.43 per cent.

This shows a decrease in total quantity of dredging of 3.43 per cent. over the previous year due to Dredger "Dubba" being out of commission for almost the whole year.

7. The Suction Plant "Saras" worked during the year, *i. e.* from July 1926 to June 1927 and has disposed of the dredgings by pumping and reclaiming land for the West Wharf Railway Yard behind the Mansfield Import Yard and has thus utilized a quantity of 1,543,225 tons of material for reclamation instead of being dumped at sea.

8. For the purpose of comparison, the Harbour is dealt with in four divisions.

ENTRANCE CHANNEL.

9 This division, coloured red on Index Plan, Plate I, is 2,650 feet long with an average width of 1,100 feet extending from Survey Section No. 34 to Survey Section No. 25.

Areas within the 28-30 feet contours.

Contour.	Area.		Increase or decrease.
	1926.	1927.	
28 Feet ...	63.39 acres	71.71 acres	+ 8.32
29 "	43.73 "	59.84 "	+16.11
30 " ...	23.39 "	33.46 "	+10.07

The increase in all the contours is due to dredging.

MAIN CHANNEL.

LOWER HARBOUR.

10. This division, coloured green on the Index Plan, Plate I, is 9,650 feet long and 600 feet wide and extends from Survey Section No. 25 to Survey Section No. 3.

Areas within the 27-30 feet contours.

Contour.	Area.		Increase or decrease.
	1926.	1927.	
27 Feet ...	135.21 acres	138.73 acres	+ 3.52
28 " ...	100.35 "	113.49 "	+13.14
29 " ...	55.32 "	73.67 "	+18.35
30 "	...	47.48 "	+47.48

The increase in the above contours 27 to 29 is due to dredging. The 30 feet contour was not plotted last year.

MAIN CHANNEL.

UPPER HARBOUR.

11. This division, coloured yellow on the Index Plan, Plate I, is about 10,000 feet long and from 700 to 1,050 feet wide, within 27 feet contour, and

comprises the Channel serving the ship berths where there is accommodation for 17 large ocean-going steamers and one coasting steamer.

Areas within the 27-30 feet contours.

Contour.	Area. 1926.	Area. 1927.	Increase or decrease.
27 Feet	105.84 acres	152.05 acres	+46.21
28 „ ...	88.01 „	108.19 „	+20.18
29 „ ...	52.37 „	41.89 „	−10.48 Decrease.
30 „	...	7.46 „	+7.46

The increase in the contours of 27 feet and 28 feet is due to dredging and the decrease in 29 feet contour is due to silting, the area generally not being dredged deeper then 29 feet this year.

NAPIER MOLE BOAT WHARF & NATIVE JETTY.

12. This division extends from the Northern end of the Upper Harbour to within 300 feet of the Napier Mole Railway Bridge, and comprises the channels for the country craft and lighters to the Napier Mole Boat Wharf and the Native Jetty, and varies in depth from 8 to 18 feet.

No dredging has been done in this area except alongside Napier Mole Boat Wharf for four weeks.

13. The subjoined statement is the abstract of the foregoing tables and shows the present state of the Harbour from the Entrance to the Napier Mole Railway Bridge.

ABSTRACT OF AREAS.

Within the contour of	Entrance Channel from Line 34 to 25. Area in acres within Channel limit. 1926	1927	Lower Harbour Main Channel from Line 25 to 3. Area in acres within Channel limit. 1926	1927	Upper Harbour Main Channel from Line 3 to 48. Area in acres within the contours. 1926	1927
27 Feet ...	..	...	135.21	138.73	105.84	152.05
28 „ ...	63.39	71.71	100.35	113.49	88.01	108.19
29 „ ...	43.73	59.84	55.32	73.67	52.37	41.89
30 „ ...	23.39	33.46	....	47.48	....	7.46

It will be seen from the foregoing comparative statement showing the abstract of areas in the different divisions that there is an increase of acreage in almost all the contours with the exception of the 29 feet contour in the Upper Harbour Main Channel due to silting.

14. The total acreage in the Harbour within the 30 feet contour is as follows :—

30 Feet contour	....	88.40 acres
29 „ „	....	175.40 „
28 „ „	....	293.39 „
27 „ „	....	290.78 „

while the anchorage area within the 20 feet contour, excluding Deep Water Point, is 456.72 acres this year against 447.87 acres, last year, showing an increase of 8.85 acres due chiefly to widening the Ship Channel (Main Channel Upper Harbour) for the West Wharf Berths.

In addition to 19 Berths, there are 18 Swinging and Fixed Moorings, thus providing accommodation for 37 ships at one time.

Two berths at the new West Wharf are ready for opening when the dredging in front can be completed.

15. The notified directions are now as follows :—

The depth in the Upper Harbour Main Channel is now 27 feet against 24 feet in previous year.

DEPTHS.

	Depth main-tained.	Height above datum.	Total depth.
AT HIGH WATER MEAN SPRING TIDES.			
In Lower Harbour Main Channel ...	27'—0"	8'—9"	=35'—9"
In Upper „ „	27'—0"	8'—9"	=35'—9"
AT HIGH WATER MEAN NEAP TIDES			
In Lower Harbour Main Channel ...	27'—0"	6'—11"	=33'—11"
In Upper „ „ ...	27'—0"	6'—11"	=33'—11"

DRAUGHTS.

In ordinary South-West Monsoon on 8 feet Spring Tides and to a greater depth at the discretion of the Port Officer, Karachi .... 30 Feet.

In bad South-West Monsoon the draught must be regulated by the state of the weather and sea.

In fair season .... 31—32 Feet.

16. The following Charts and Drawings are appended to illustrate this report :—

Plate I—Index Plan showing divisions of the Harbour.

Plate II—Chart of the Harbour, scale 742 ft.=1 inch.

Plate III—Comparative Chart with tabulated areas of the Channel and deep water anchorages.

GENERAL.

17. The area sounded for this year's report was 3880.02 acres against 3786.80 acres last year, an increase of 93.22 acres. The number of soundings taken from 1st July 1926 to 30th June 1927 was 64,979 against 52,374 the year before, and the distances sounded were 226.90 nautical miles against 199.28 last year.

18. The contour shown in Plate No. 1 (Index Plan) is the 27 feet contour.

The area coloured red (Entrance Channel) within this contour has a minimum depth of 28 feet and the area coloured green (Main Channel Lower Harbour) has a minimum depth of 27 feet.

The area coloured yellow (Main Channel Upper Harbour) has a minimum depth of 27 feet.

The area of Napier Mole Boat Wharf and Native Jetty varies in depth from 8 to 18 feet.

The contours on the Chart (Plate No. II) are shown in fathoms.

J. B. S. THUBRON,

Chairman

5th March 1928.

...LATIONS TINTED IN DIFFERENT COLOURS
JUNE 1927
SCALE 1500 FT. TO AN INCH.
1500 1200 900 600 300 0 1500 3000 4500
KHUDDA
FISH MARKET
HARRIS ROAD
OLD TOWN
MUCHEE MEANEE
HINDOO TEMPLE.
CUSTOMS HOUSE
BUNDER ROAD
PORT TRUST OFFICE
RAILWAY BUNDER HEAD STATION YARD
MANSFIELD IMPORT YARD.
NATIVE JETTY
HARDINGE BRIDGE
HINDOO TEMPLE
QUEEN'S ROAD
TIMBER LANDING.
TIMBER POND.
CHINNA CREEK
BOAT HOUSE
N.M. BOAT WHARF
H.W.M.
L.W.M.O.S.T.
WEST WHARF
PUHI CREEK
BABA CHANNEL
BANK
BABA ISLAND
YARIRI CREEK.
BHIT FISHING VILLAGE
TIME BALL
MAIN CHANNEL (UPPER HARBOUR)
KEAMARI SHIP BERTHS
27 FT.
CHINNA CREEK BACK-WATER
NAPIER MOLE ROAD (HIGH ROAD TO KARACHI)
TOWN SHIP OF KEAMARI
PORT TRUST INDIAN VILLAGE
OLD RAILWAY BRANCH TO CANTONMENT.
H.W.M.O.S.T.
B.O.C. OIL INSTALLATION
TANK STORAGE CO. (INDIA) LTD
DANGEROUS PETROLEUM HUT
PORT TRUST KEROSINE OIL GODOWN.
A.P.C. OIL INSTALLATION.
CHEMICAL ANALYSERS LABORATORY. AND DISINFECTING STATION.
BOAT BASIN
SAND
JULIAH CREEK
WEST TRAINING GROYNE
POWDER MAGAZINES
EXPLOSIVES PIER.
BEACON
KEAMARI GROYNE
MAIN CHANNEL (LOWER HARBOUR)
DRIES AT L.W.SPRING
CHOTA ANDAI.
PYRAMID ROCK
BAUR IS.
OYSTER ISLANDS.
BARA ANDAI.
TIDE GAUGE
K.P.T. WORK PEOPLE LINES
H.W. PIER
TELE. PIER.
PILOT PIER.
ROCK
MILITARY PIER
ROCKEY LEDGE
HINDOO TEMPLE
ARABIAN SEA.
MANORA POINT
LIGHT HOUSE
MANORA BREAK-WATER.
WHITE OCCULTING LIGHT.
ENTRANCE CHANNEL

KARACHI HARBOUR

REDUCED CHART

OF

JUNE 1927

SCALE 742 FEET TO AN INCH

FT 1000 800 600 400 200 0 1000 2000 3000 FT

NATURAL SCALE $\frac{1}{8810}$

REFERENCES.

Soundings are in feet below K.H.W. datum. i. e., Low water Ordinary Spring Tides, and are shown thus .... 18^{2}

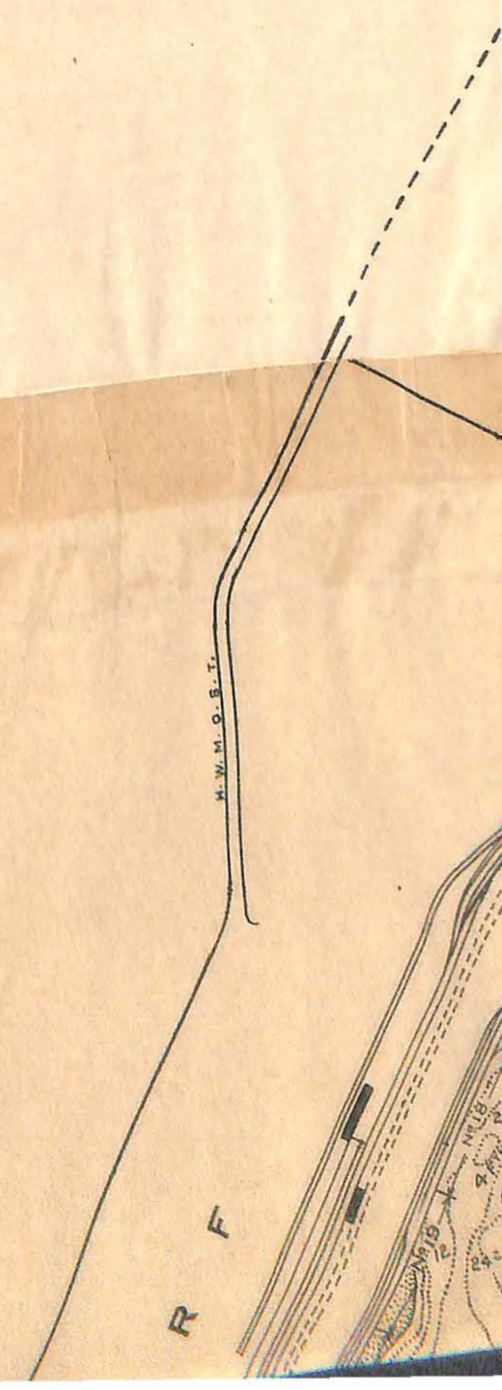
TIDES ABOVE DATUM.

Highest Spring High Water	11'-5"
Ordnary Spring ... do	9'-6"
Mean Spring .... do	8'-9"
Mean Neap........... do	6'-11"
...... do ...... Low Water	3'-3"
Mean Spring .... do	1'-5"

BELOW DATUM.

Lowest Spring Low Water rare occurrence .... 1'-10"

NOTE:-
13 FIXED.
5 SWINGING.
18 MOORINGS.



Hal Kent
M. INST. C.E.
DY. CHIEF ENGINEER,
KARACHI PORT TRUST.

W. P. Shepherd-Barron
M. INST. C.E.
CHIEF ENGINEER
KARACHI PORT TRUST.

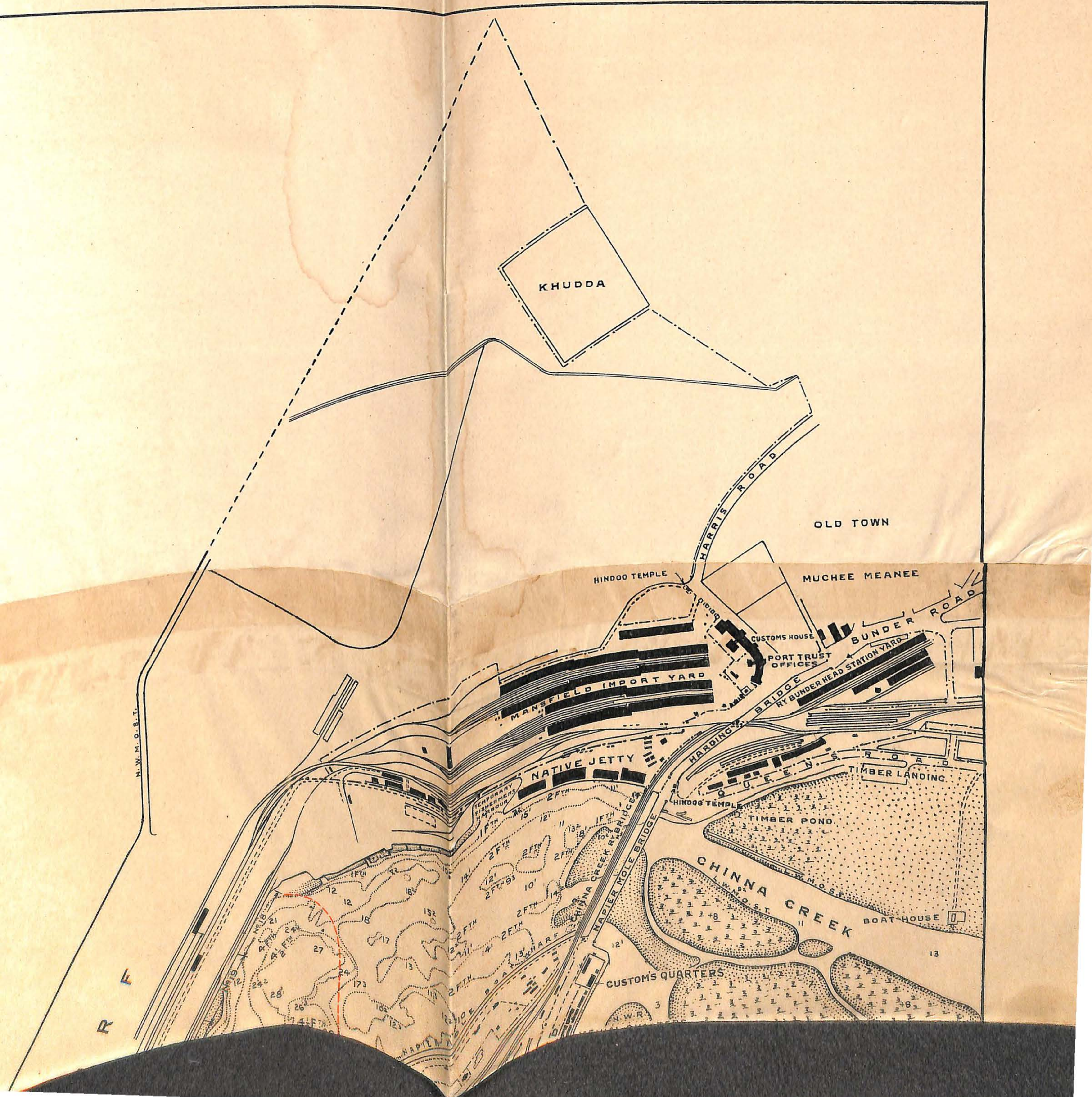
ARBOUR
HART
27

INCH
2000
3000 FT.
9810

TS.
tum. i. e., Low water
n thus 18²

UM.
.... 11'-5"
.... 9'-6"
.... 8'-9"
.... 6'-11"
.... 3'-3"
.... 1'-5"

ccurrence .... 1'-10"



W. P. Shepherd Barron
CHIEF EN M. INST. C.E.
KARACHI POR EER
TRUST